

AMENDMENTS TO THE CLAIMS

Claim 1. (Original) A crystal oscillator nanochannel sensor comprising a nanochannel body thin film which has an oxide layer including surfactant micelles and is disposed on the surface of an electrode on a crystal oscillator of a crystal oscillator microbalance, the sensor detecting a change in the weight of the nanochannel body thin film, which change is caused by a collected target substance, as a change in the frequency of the crystal oscillator to thereby detect the existence of the target substance.

Claim 2. (Original) A crystal oscillator nanochannel sensor comprising a nanochannel body thin film in which a nanochannel body of the oxide layer is chemically modified and which is disposed on an electrode on a crystal oscillator of a crystal oscillator microbalance, the sensor detecting a change in the weight of the nanochannel body thin film, which change is caused by a collected target substance, as a change in the frequency of the crystal oscillator to thereby detect the existence of the target substance.

Claim 3. (Original) The crystal oscillator nanochannel sensor according to claim 1 or 2, wherein the oxide layer of the nanochannel body is constituted primarily of silicon oxide.

Claim 4. (Currently Amended) The crystal oscillator nanochannel sensor according to claim 1 or 2 ~~any of claims 1 to 3~~, the sensor detecting the existence of a target substance in a sample liquid phase.

Claim 5. (Currently Amended) The crystal oscillator nanochannel sensor according to claim 1 or ~~[[4]]~~2, the sensor detecting the existence of a target substance by mixing a

recognition reagent and a sample solution and extracting the recognition reagent and the target substance collected by the reagent in the nanochannel.

Claim 6. (Original) The crystal oscillator nanochannel sensor according to claim 4, the sensor detecting the existence of a target substance by impregnating a nanochannel with a recognition reagent in advance to make the included recognition reagent collect a target substance in a sample solution.

Claim 7. (Currently Amended) The crystal oscillator nanochannel sensor according to claim 1 or 2 ~~any of claims 1 to 3~~, the sensor detecting the existence of a target substance in a sample vapor phase.